and thereby were caught in the open seas and unable to obtain shelter in a safe harbor.

The disturbances were attended by generous rains west of the Cascade Mountains, notwithstanding which fact most of the rivers in that section were but little affected and maintained lower stages than usual under such conditions. The storms, after making their appearance off the Washington coast, in nearly every instance moved northeasterly over British Columbia, and on this account the rainfall in the intermountain section of the North Pacific district, was much less than usual.

The temperatures were uniformly mild, and in the principal agricultural sections of western Oregon and western Washington, no killing frosts have yet occurred.—*E. A. Beals, District Forecaster.*

SOUTH PACIFIC FORECAST DISTRICT.

The month opened with a moderate disturbance over the north Pacific coast accompanied with high southeasterly wind and rain as far south as San Francisco. The disturbance moved eastward along the international boundary. A succession of disturbances passed northward during the month, most of them too far north to influence conditions south of San Francisco. The month, as a whole, showed a deficient rainfall in the southern and central portions of the State. In the vicinity of San Francisco less than half the normal amount of rain fell, and in California, south of the Tehachapi, no rain fell during the month. The absence of rain at this time materially affects crop conditions. A heavy "norther" was reported in the valleys of the southern portion of the State on November 11. A marked disturbance occurred on November 15 and thunderstorms were reported in the northern portions of the State. The month was singularly free from frosts.—*Alexander G. McAdie, Professor and District Forecaster.*

## RIVERS AND FLOODS.

River conditions during November did not differ materially from those of the preceeding month. The Mississippi River and its tributaries showed but slight change; in the northern portion there was a slow and steady fall throughout the month; in the southern portion there was a slight rise during the first half and a slow fall during the last half of the month.

The rivers of the Atlantic slope were highest during the middle of the month and with the exception of the Cape Fear, Pedee, and Wateree rivers showed but slight changes.

On November 1, 1904, a new river gage was put in service at Riverton, Ala.; the zero of the new gage is 1.2 feet lower than that of the gage used previous to November 1.

The highest and lowest water, mean stage, and monthly range at 251 river stations are given in Table VII. Hydrographs for typical points on seven principal rivers are shown on Chart V. The stations selected for charting are Keokuk, St. Louis, Memphis, Vicksburg, and New Orleans, on the Mississippi; Cincinnati and Cairo, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport, on the Red.—*E. B. Garriott, Professor.*

# CLIMATE AND CROP SERVICE.

By Mr. JAMES BERRY, Chief of Climate and Crop Divison.

The following summaries relating to the general weather and crop conditions during November are furnished by the directors of the respective sections of the Climate and Crop Service of the Weather Bureau; they are based upon voluntary reports from meteorological observers and crop correspondents, of whom there are about 3300 and 14,000, respectively:

*Alabama.*—Weather favorable for gathering late crops. Long drought broken early in month. Beneficial rains early and latter parts of last decade, but precipitation generally slightly deficient. Several light freezes. Comparatively little plowing done. Some wheat and oats up to good stands by close of month; small acreage in oats, considerably more to be sown during winter. Cotton practically all picked by 15th, yield slightly above average. Corn all housed, yield good. Minor crops fairly good.—*F. P. Chaffee.*

*Arizona.*—Dry weather prevailed generally during November. Temperature averaged slightly below normal. Frost did little damage in central and southern counties, but suspended all growth in northern counties. Planting was in progress, except in the northern section of the Territory, where the ground was too dry for plowing. Dry feed was plentiful on ranges; stock was in good condition for the approaching winter, and farming conditions were generally favorable.—*H. K. Holcomb.*

*Arkansas.*—Temperature was about normal, rainfall deficient. Month favorable for gathering outstanding crops, but too dry for fall plowing. Cotton picking and corn gathering carried on without interruption, and by close of month only small per cent remained in field. Less than usual acreage sown to fall grains, but where sown they did fairly well. Stock not doing well, owing to scarcity of water and to lack of good pasturage—*O. C. Burrows.*

*California.*—Weather conditions were about normal, except in southern California, where abnormally high temperatures occurred, accompanied by drying winds. The rainfall in the central and northern sections was abundant for the season, and much progress was made in plowing and seeding. The drought seriously retarded farming operations in the southern sections. Early sown wheat made good growth. The grain acreage promised to be larger than usual, except in the south. Orange picking and shipping commenced on the 1st.—*Alexander G. McAdie.*

*Colorado.*—The month was favorable for the securing of crops, but was too dry for fall plowing. Grass was reported good, except in the Arkansas Valley, the south-central counties, and on the Divide, where it was reported fair. Stock water was generally sufficient, and at the end of the month cattle, horses, and sheep were in good condition.—*F. H. Brandenburg.*

*Florida.*—The month averaged cooler and wetter than the normal. Farm work was advanced. The last of the cotton crop was picked and minor crops harvested. The shipment of citrus fruits continued active, a large portion of the crop having been marketed. The condition of vegetables was improved, except in small areas where precipitation was deficient. Frost formed over all districts except the southern, and freezing temperatures occurred over portions of the western and northern districts; no damage.—*A. J. Mitchell.*

*Georgia.*—Unusually favorable weather for farming operations prevailed. Harvesting practically completed; yields generally good. Cotton above average, quality exceptionally fine. Moisture sufficient for fall plowing; seeding progressing rapidly, seed germinating and growing nicely. Increased acreage sown to oats, rye, and wheat. Low temperatures with killing frost on 14th to 18th and 27th and 28th. Cane grinding and potato digging in progress.—*J. B. Marbury.*

*Idaho.*—This was the driest and warmest November on record. Late fall plowing was retarded by dry weather. Winter wheat was slow in starting in localities, but was generally thrifty. Fruit trees were in excellent condition. Range grass was short in some localities. Stock was in fair to good condition.—*Edward L. Wells.*

*Illinois.*—A drought extending through October prevailed at the end of the month. The weather conditions were unfavorable for grasses and fall-sown wheat, but quite favorable for husking and garnering corn. Wheat maintained a good condition, but needed rain. Pastures were short in most sections and entirely bare in some. The greater portion of the corn crop had been husked and cribbed. Apples were keeping well in the northern counties, but much complaint of rotting was made elsewhere.—*Wm. G. Burns.*

*Indiana.*—The absolute range of temperature was 48°. Wheat suffered from freezing more than it would have had the ground been moist. November, 1904, was the driest on record in Indiana. The average precipitation was 0.36 inch, and the greatest amount at any station was 1.00 inch. Wheat and fall sown grasses in the central and southern sections suffered from drought. Good progress was made in cribbing corn.—*W. T. Blythe.*

*Iowa.*—The month was unusually warm and was the driest November on record. Ideal conditions prevailed for husking corn, which was mostly harvested without damage from heating. Pastures were excellent, and much fall plowing was done. Fall wheat and rye suffered some harm from drought. The total yield of crops was very satisfactory. The output of corn was about 60,000,000 bushels above the average of fifteen years.—*John R. Sage.*

*Kansas.*—Wheat generally was in good condition and most of it growing. The early sown wheat was all good, but the late sown was being injured in some counties by drought. Corn had generally been cribbed, except in the northwestern counties, where it was being gathered. Stock continued in good condition, but in the southern counties stock water became scarce.—*T. B. Jennings.*

*Kentucky.*—The drought that prevailed during October continued throughout November. It was general over the State, except in a few

of the southeastern counties. The early wheat, which had come up, could make no growth and dried out until it showed little appearance of life; that sown late lay in the dust without germinating. The air was so dry that tobacco could not be handled, and at the end of the month very little had been moved.—*H. B. Hersey.*

*Louisiana.*—Very little rain in many parts of the State and drought became severe in many localities. Exceptionally favorable for gathering matured crops. Temperature fell to 28° November 13 over black lands in sugar region and damaged cane in a few localities, but the low temperature was of short duration and was generally beneficial to the crop by causing a more rapid development of sugar content. Grinding pushed forward rapidly, yield generally satisfactory. Fall gardens suffered from effects of dry weather. The orange crop was good. The acreage seeded to wheat, oats, rye, and barley was small.—*I. M. Cline.*

*Maryland and Delaware.*—The month was cold and dry, but unusually pleasant and favorable for work. The notable feature was the severe coast storm of the 13th, with attendant heavy snow and rain and damage to telegraph service. This storm gave most of the monthly precipitation. Corn was practically all secured, both grain and stover in fine condition. Wheat was short, but well rooted and free from fly. Much plowing was done. Water was very low in western counties.—*Oliver L. Fassig.*

*Michigan.*—The weather during November was warm, pleasant, and very dry. These conditions were very favorable for harvesting corn and sugar beets, but were detrimental to pastures and the best growth of winter wheat and rye. Winter wheat at the beginning of the month was in very good condition, but made little if any growth during November, yet at the close of the month did not show any material deterioration. Pasturage was quite poor. The soil at the close of the month was very dry.—*C. F. Schneider.*

*Minnesota.*—A month of unusually mild temperature, with sunny weather and little precipitation. All lakes unfrozen till late in the month. Rye generally good. Plowing early in the month. The dry weather was favorable for finishing thrashing and for corn husking. There was very little snow lying on the ground at any time in the southern half of the State—*T. S. Outram.*

*Mississippi.*—Unusually favorable weather prevailed for gathering crops. Cotton picking was interrupted by rain on only three or four days, and was practically completed by the close of the month, except in a few western counties, where labor was scarce. The crop was secured in fine condition, with a yield considerably above the average. Cane yielded well. But little fall plowing or seeding was done on account of the very dry fall.—*W. S. Belden.*

*Missouri.*—The month was the driest on record, covering a period of twenty-two years. The lack of moisture was somewhat detrimental to the wheat crop. The plant made much less than the normal growth above ground, but, as is usually the case during dry autumns, extra root growth was developed in the effort to find moisture in the subsoil. Damage by the Hessian fly, while not serious, was noted in nearly every county. About half of the corn crop was cribbed; that part of the crop remaining in the field was in shock and in good condition.—*George Reeder.*

*Montana.*—Warm, dry weather prevailed throughout the month. Fall work, except plowing, made favorable progress. The most unfavorable feature affecting cattle and sheep was the scarcity of water on the range. Range feed was still fairly plentiful in the eastern counties; much stock was being pastured on meadows. Fall wheat and rye were up in a few favored sections, but over most of the State these crops made little or no growth.—*R. F. Young.*

*Nebraska.*—The dry, warm weather of the month allowed rapid progress in corn husking and generally rather more than three-fourths of the crop was in the crib at the end of the month. The dry weather was somewhat unfavorable for winter wheat, but no serious injury resulted from lack of moisture. The Hessian fly appeared quite generally and did serious damage in many places.—*G. A. Loveland.*

*Nevada.*—The month was remarkably dry, with warm days and cold nights. The weather conditions were very favorable to stock interests and for farm work. Feed in pastures and on foot hills was unusually good and stock of all kinds was in excellent condition throughout the month.—*J. H. Smith.*

*New England.*—The weather during the month was generally cold and dry. The mean temperature for the entire district, 32.6°, was the lowest for November in the history of the New England section of the Climate and Crop Service. The water in reservoirs, streams, and wells was low in many sections and rain was much needed. The fair weather and abundant sunshine were very favorable to farming interests and to outdoor pursuits.—*J. W. Smith.*

*New Jersey.*—Although droughty conditions obtained, early sown wheat, rye, and grass were in excellent condition and had an unusually good top; the late sown wheat, especially in the southern section, was backward, owing to a great lack of moisture. Meadows and pastures were remarkably good. Young apple and plum trees were badly infested with San Jose scale, and all efforts to check seemed futile.—*Edward W. McGann.*

*New Mexico.*—The mild, dry weather of the month was favorable for harvesting, hay baling, and some seeding. The soil was well moistened and favorable for late plowing and seeding. The range was short in some northern counties, but was generally fair to good throughout the Territory. Stock was in good condition. Water was plentiful and the outlook for winter generally favorable.—*Charles E. Linney.*

*New York.*—The weather was generally favorable for crops and farm work. Considerable plowing was done. Wheat and rye were in good condition, but growth was checked by drought. Streams were low and many wells were drying up. Some damage resulted to timothy from freezing. Pastures were poor.—*Morgan R. Sanford.*

*North Carolina.*—The long drought was broken by copious rain on the 3d and 4th; general rains also occurred on the 12th and 13th. The soil was placed in good condition for plowing; seeding winter wheat and oats proceeded rapidly, but was not completed. The bulk of the winter cereals was seeded late, but large crops were being sown. Early sown wheat showed good growth. Heavy to killing frosts during the month did not injure crops materially.—*C. F. von Herrmann.*

*North Dakota.*—The month was much warmer than usual, with generally clear skies and quite a decided deficiency in precipitation. Thrashing was finished in all sections. As the ground was not frozen to any great extent, fall plowing was extensively carried on. The absence of snow on the ground enabled stock to feed upon the open ranges throughout the month.—*B. H. Bronson.*

*Ohio.*—At most stations it was the driest month on record. Most of the rain fell on the 10th and 13th. The temperature averaged slightly below normal. Wheat made but little or no growth. Much of it was not up in the south. Pastures and meadows were badly dried up as a result of the drought. Tobacco cured well, but was too dry for stripping. The husking of corn progressed fairly well.—*J. Warren Smith.*

*Oklahoma and Indian Territories.*—Wheat was in varying condition; early looked well over western portion, but was in poor condition elsewhere, while much of the late had not germinated or was a very poor stand; rain was badly needed to advance growth of crop. Cotton was nearly all picked, with fair to good yields secured in good condition.—*C. M. Strong.*

*Oregon.*—November was warmer than usual. The rainfall was slightly above normal in the northwest quarter of the State and deficient in all other sections. A large amount of land was plowed and seeded to fall wheat, vetch, and cheat, all of which germinated nicely. Pasturage was generally better than usual and stock nearly everywhere went into winter quarters in good condition. Fruit trees were in good condition to stand the coming winter.—*Edward A. Beals.*

*Oregon.*—[Report for October. Received too late for insertion in the October REVIEW.] The month throughout was very favorable for agriculture. The rains during the early part wet the soil to a good depth, and the long period of bright, sunshiny weather immediately following them afforded ample opportunity for outside work, and a large amount of plowing and seeding was accomplished. Early seeded wheat germinated nicely and its condition generally was above the average.—*Edward A. Beals.*

*Pennsylvania.*—The driest November in the history of the service (1887). Crops in practically all districts suffered from drought. At the close of the month early sown wheat ranged from fair to good; late sown had germinated and developed so slowly that much of it was in an unfavorable condition to withstand the effects of the winter weather. Meadows and pastures were turning brown. General farm work and plowing were well advanced. In many sections water was hauled for stock and domestic purposes.—*T. F. Townsend.*

*Porto Rico.*—There was a scarcity of precipitation in many sections up to the 24th, but after that date the rainfall was sufficient in all districts. The older canes were maturing well and sugar making had begun at many haciendas; the outlook for a good yield was excellent. Young canes were in good condition, although somewhat short. Cotton picking progressed during the month, and many new plots were planted. All crops were in good condition; pasturage was abundant and stock was doing well.—*E. C. Thompson.*

*South Carolina.*—The weather conditions during November were favorable for gathering the crops that remained in the fields, such as scattering late cotton, corn, sweet potatoes, seed peas, and minor crops. Enough rain fell to soften the ground and permit wheat and oat seeding, although this work was not finished. Germination was slow, though satisfactory. A general killing frost on the 15th brought to a close the growing season of 1904. There was no loss in harvesting from bad weather.—*J. W. Bauer.*

*South Dakota.*—Month considerably warmer and drier than usual. Conditions were very favorable for outstanding crops, for husking and cribbing corn, and for the uninterrupted grazing of stock on the open ranges. Live stock and winter range pasturage were in good condition, also winter rye and the limited acreage of winter wheat. Dry soil prevented the usual amount of plowing in some central counties. At the close of the month the cribbing of corn was nearing completion.—*S. W. Glenn.*

*Tennessee.*—The month generally was too dry and cool for the proper germination and growth of grain, but was exceedingly favorable for gathering matured crops, and at its close the finest corn crop for many years had been housed, and the gathering of cotton was about completed. Early sown grain was looking well and good stands were the rule. The acreage in wheat was considerably larger than that of last year.—*H. C. Bate.*

*Texas.*—Ideal weather prevailed during the month for harvesting operations, but the rainfall was not sufficient for seeding purposes and the

SUMMARY OF TEMPERATURE AND PRECIPITATION BY SECTIONS, NOVEMBER, 1904.

In the following table are given, for the various sections of the Climate and Crop Service of the Weather Bureau, the average temperature and rainfall, the stations reporting the highest and lowest temperatures with dates of occurrence, the stations reporting greatest and least monthly precipitation, and other data, as indicated by the several headings.

The mean temperatures for each section, the highest and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperature and precipitation are based only on records from stations that have ten or more years of observation. Of course the number of such records is smaller than the total number of stations.

| Section. | Temperature—in degrees Fahrenheit. | | | | | | | Precipitation—in inches and hundredths. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Section average. | Departure from the normal. | Monthly extremes. | | | | | Section average. | Departure from the normal. | Greatest monthly. | | Least monthly. | |
| | | | Station. | Highest. | Date. | Station. | Lowest. Date. | | | Station. | Amount. | Station. | Amount. |
| Alabama | 51.8 | — 1.4 | Lucy | 86 | 10 | Anniston, Goodwater | 21 15, 28 | 2.98 | −0.14 | Scottsboro | 5.74 | Camp Hill | 1.26 |
| Arizona | 53.6 | — 0.4 | Parker | 94 | 8 | Flagstaff, Tuba, Fort Defiance | 8 12, 11, 12 | 0.02 | −0.61 | Bowie | 0.40 | 40 stations | 0.00 |
| Arkansas | 51.4 | + 0.6 | Amity, Howe | 89, 89 | 24, 4 | Heber | 17 15 | 1.38 | −2.44 | Elon | 4.90 | 3 stations | 0.00 |
| California | 54.9 | + 1.5 | Ventura | 97 | 11 | Bodie | — 1 19 | 1.44 | −0.98 | Monumental Mine | 13.87 | 40 stations | 0.00 |
| Colorado | 37.3 | + 2.6 | Wray | 77 | 27 | Westcliffe | —11 10 | 0.04 | −0.58 | Santa Clara | 0.63 | 29 stations | 0.00 |
| Florida | 62.3 | — 2.4 | Malabar | 86 | 3 | Marianna, Molino | 27 15, 27 14 | 2.97 | +0.72 | Key West | 6.22 | Stephensville | 1.50 |
| Georgia | 52.9 | — 1.1 | Blakely | 85 | 4 | Clayton | 21 14, 15 | 3.07 | +0.29 | Fleming | 4.66 | Tallapoosa | 0.68 |
| Idaho | 41.3 | ..... | Milner | 73 | 1 | Chesterfield | 1 13 | 0.68 | ..... | Lake View | 3.20 | 2 stations | 0.00 |
| Illinois | 43.0 | + 2.6 | Colchester, Friends Grove | 78 | 2 | 5 stations | 11 27, 30 | 0.26 | −2.30 | Palestine | 1.10 | 2 stations | 0.00 |
| Indiana | 41.9 | + 0.6 | Seymour | 82 | 1, 3 | Rockville | 10 27 | 0.36 | −3.25 | Bloomington | 1.00 | 3 stations | T. |
| Iowa | 41.0 | + 6.3 | Ruthven, Waukee | 80 | 18 | Britt | 4 30 | 0.15 | −1.25 | 2 stations | 0.50 | Rockwell City | 0.00 |
| Kansas | 46.2 | + 3.8 | Coffeyville | 84 | 7, 20 | Norton | 0 11 | 0.15 | −1.01 | Baker | 0.60 | Gove | 0.00 |
| Kentucky | 44.7 | — 1.2 | Hopkinsville | 79 | 2 | Anchorage | 14 27 | 0.89 | −2.83 | Middleboro | 3.56 | Catlettsburg | 0.14 |
| Louisiana | 57.1 | — 1.2 | Lake Charles, Schriever | 85, 85 | 1, 17 | Plain Dealing | 20 13 | 2.00 | −1.88 | Collinston | 6.20 | Reserve | 0.00 |
| Maryland and Delaware | 41.8 | — 2.5 | Boettcherville, Md. | 72 | 20 | Oakland, Md | 11 22 | 1.68 | −1.30 | Cambridge, Md | 2.86 | Westernport, Md | 0.29 |
| Michigan | 37.7 | + 2.1 | Marquette | 73 | 3 | Roscommon | — 6 28 | 0.45 | −2.33 | Houghton | 2.06 | 2 stations | 0.00 |
| Minnesota | 36.7 | + 7.8 | Red Wing | 78 | 3 | Hallock | —14 30 | 0.14 | −0.79 | Mount Iron | 0.60 | Red Wing | 0.00 |
| Mississippi | 53.4 | — 1.2 | Port Gibson | 87 | 19 | Austin | 20 15 | 2.72 | −0.51 | Columbus | 4.79 | Tchula | 1.02 |
| Missouri | 46.3 | + 3.6 | Lexington | 83 | 16 | Sublett | 11 30 | 0.22 | −2.09 | De Soto | 0.89 | 8 stations | T. |
| Montana | 39.7 | + 8.5 | St. Pauls | 80 | 4, 5 | Culbertson | — 7 30 | 0.23 | −0.65 | Troy | 3.86 | 6 stations | 0.00 |
| Nebraska | 42.4 | + 6.3 | Santee | 81 | 18 | Agate, Bridgeport | 0 11 | 0.11 | −0.48 | Wisner | 0.50 | 9 stations | 0.00 |
| Nevada | 41.8 | + 2.3 | Sodaville | 80 | 7 | Tecoma | 2 11, 12, 19 | 0.06 | −0.60 | Lewis Ranch | 0.68 | 18 stations | 0.00 |
| New England* | 32.6 | — 6.0 | Rockport, Mass | 67 | 20 | Woodstock, Vt | —10 29 | 1.63 | −2.55 | Cummington, Mass. | 3.55 | Derby Line, Vt | 0.50 |
| New Jersey | 40.2 | — 3.2 | Bridgeton | 69 | 3 | Charlotteburg | 6 29 | 2.18 | −1.53 | Englewood | 3.40 | South Orange | 1.30 |
| New Mexico | 43.1 | — 0.6 | Carlsbad | 86 | 21 | Vermejo | — 6 11 | 0.20 | −0.39 | Carlsbad | 0.96 | 11 stations | 0.00 |
| New York | 34.2 | — 2.9 | Ripley | 67 | 2 | Arcade, Paul Smiths | —12 28, —12 29 | 0.96 | −2.19 | Mount Hope | 2.79 | Plattsburg | T. |
| North Carolina | 47.7 | — 2.0 | Whiteville | 79 | 21 | Jefferson | 12 15 | 3.36 | +0.16 | Pinehurst | 5.72 | Sloan | 1.59 |
| North Dakota | 35.7 | +12.4 | Churchs Ferry | 80 | 1 | Dunseith, Willow City | —10 30 | 0.09 | −0.58 | Jamestown | 0.55 | 12 stations | T. |
| Ohio | 40.5 | — 0.4 | Napoleon, Warren | 75 | 3 | Medina | 0 28 | 0.37 | −2.61 | Canton | 1.22 | Hedges | T. |
| Oklahoma and Indian Territories. | 51.6 | + 2.5 | Pauls Valley, Ind. T. | 90 | 24 | Woodward, Okla | 8 12 | 0.21 | −1.88 | 2 stations | 0.80 | 5 stations | 0.00 |
| Oregon | 46.9 | + 4.3 | Williams | 79 | 9 | Silver Lake | 8 29, 30 | 5.25 | −0.45 | Glenora | 30.49 | Ontario | T. |
| Pennsylvania | 38.8 | — 1.3 | Skidmore | 79 | 3 | Condersport | — 4 28 | 1.15 | −2.09 | Coatesville | 3.22 | Lock No. 4 | 0.14 |
| Porto Rico | 77.5 | ..... | Central Aguirre | 98 | 2, 3 | Adjuntas | 55 30 | 7.74 | ..... | La Carmelita | 16.17 | Ponce | 3.00 |
| South Carolina | 51.6 | — 2.2 | Walhalla | 80 | 22 | Greenville, Santuc | 22 15 | 2.78 | −0.05 | Yorkville | 4.39 | Conway | 1.20 |
| South Dakota | 39.4 | + 9.3 | 4 stations | 80 | 5 dates | Cavite | —15 11 | 0.09 | −0.45 | Grand River School | 0.38 | 2 stations | 0.00 |
| Tennessee | 46.7 | — 1.2 | Dover | 78 | 1 | Jonesboro | 11 15 | 2.46 | −1.34 | Walling | 5.55 | Dyersburg | 0.59 |
| Texas | 57.0 | + 0.3 | Athens, Greenville | 90, 90 | 2, 17 | Texline | 11 11 | 0.99 | −1.46 | Port Lavaca | 4.91 | 5 stations | 0.00 |
| Utah | 39.4 | + 2.5 | Fillmore | 83 | 22 | Woodruff | 0 11 | T. | −0.79 | Meadowville | 0.05 | 55 stations | 0.00 |
| Virginia | 44.1 | — 2.8 | Bedford City | 77 | 2 | Burkes Garden | — 3 15 | 2.12 | −0.43 | Speers Ferry | 4.05 | McDowell | 0.07 |
| Washington | 47.4 | + 4.6 | South Bend | 78 | 8 | Crescent | 19 12 | 5.37 | +0.55 | Brinnon | 23.56 | Pomery | T. |
| West Virginia | 41.2 | — 1.7 | Bancroft, Moorefield | 75, 75 | 3, 1 | Lewisburg, Green Sulphur Spgs | 9 15 | 0.64 | −2.32 | Elkhorn | 3.05 | Creston | 0.07 |
| Wisconsin | 37.7 | + 7.7 | Prairie du Chien | 84 | 1 | Prentice, Wausau | — 3 30 | 0.19 | −1.42 | Hancock | 0.49 | 5 stations | T. |
| Wyoming | 35.6 | + 5.9 | Cambria | 78 | 2 | South Pass City | — 8 10 | 0.12 | −0.51 | Red Bank | 0.95 | 6 stations | 0.00 |

*Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut.

growth of young grain, especially in the northern counties. Killing frosts were general over the State on the 11th and 12th, except in the coast district, where light to heavy frosts occurred in exposed localities; damage from frost slight. Gathering of corn and cotton completed; harvesting of forage crops well advanced, yield good. Acreage in grain slightly increased where favorable conditions prevailed at sowing time, but in some of the central counties the acreage was below the average on account of drought. Early sown grain did well, but late sowings were backward. The cane crop, now practically harvested, gave highly satisfactory results both in quantity and quality of juice. Rice crop average, harvesting completed. Gardening generally a failure, except in the coast district. Pasturage good and stock in fine condition.—*William H. Alexander.*

*Utah.*—The close of November marked the sixth week of unprecedented drought throughout the entire section, leaving the atmosphere pervaded with dust and the soil thirsting for moisture. Early sown grain was nourished through the germination period by timely rains and warm weather, and has since made a stout resistance to the deteriorating influences of the drought. Later sown cereals have lain dormant in the dusty seed bed, with little hope of growing. A vast acreage was broken for spring planting, and farmers are, without exception, well prepared for the winter and spring seasons.—*R. J. Hyatt.*

*Virginia.*—The general weather conditions of the month were unfavorable for the progress of all fall sown crops, particularly in the great valley divison and portions of the middle division, where precipitation was relatively light. The deficiency in temperature was also injurious. Winter wheat and oats, rye, and clover made very slow advance, and, locally, some of the late seeding of these crops failed of germination. The work of the month consisted mainly of corn husking, late seeding, and putting farms in order for the winter.—*Edward A. Evans.*

*Washington.*—The month was unusually mild, with frequent and abundant rains in the western division, but a deficiency of precipitation in the eastern division. The rainfall in the eastern section was, however, sufficient to germinate winter wheat nicely and to cause it to grow well, except in very dry localities. Seeding was completed; a large acreage was put in. There was no snow in the wheat region, but the weather was not severe enough to injure wheat.—*G. N. Salisbury.*

*West Virginia.*—The rainfall was very light during the month. The drought was prolonged and serious and water very scarce. Wheat and rye made practically no growth, and the prospects were not encouraging. Stock was in fairly good condition, and was mostly being fed. Corn was mostly in crib, but some remained to be husked, as fodder was very dry to handle.—*E. C. Vose.*

*Wisconsin.*—The month was unusually mild and very dry. The precipitation at Milwaukee during the month was the least recorded in Novem-

ber in sixty-three years and at Manitowoc in forty-one years. Lack of moisture caused winter wheat and rye to make slow growth, but the plants were healthy and in good condition to withstand the winter.—*W. M. Wilson.*

*Wyoming.*—The weather for the month was unusually mild, and precipitation unusually light. Conditions were extremely favorable for stock interests, except that the absence of snowfall prevented many flocks from being pastured on winter ranges. The ranges of the State were in good condition and stock was keeping fat.—*W. S. Palmer.*

## SPECIAL ARTICLES.

### RECENT PAPERS BEARING ON METEOROLOGY.

Mr. H. H. KIMBALL, Librarian and Climatologist.

The subjoined titles have been selected from the contents of the periodicals and serials recently received in the Library of the Weather Bureau. The titles selected are of papers or other communications bearing on meteorology or cognate branches of science. This is not a complete index of the meteorological contents of all the journals from which it has been compiled; it shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau. Unsigned articles are indicated by a ——.

*Nature. London. Vol. 71.*

**Rindell, Arthur.** Prof. Karl Selim Lemström. P. 129.

—— Date of the most recent sun-spot minimum. P. 133.

—— Relations between solar and terrestrial phenomena. [Note on paper of H. I. Jensen.] Pp. 158–159.

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